Catalogue no. 82-003-X
ISSN 1209-1367

Health Reports

Prevalence and correlates of marijuana use in Canada, 2012

by Michelle Rotermann and Kellie Langlois

Release date: April 15, 2015

Statistics Canada Statistique Canada

Canada

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, www.statcan.gc.ca.

You can also contact us by

email at infostats@statcan.gc.ca

telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following toll-free numbers:

- Statistical Information Service 1-800-263-1136
- National telecommunications device for the hearing impaired 1-800-363-7629
- Fax line 1-877-287-4369

Depository Services Program

- Inquiries line 1-800-635-7943
- Fax line 1-800-565-7757

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under "About us" > "The agency" > "Providing services to Canadians."

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Standard table symbols

The following symbols are used in Statistics Canada publications:

. not available for any reference period
.. not available for a specific reference period
... not applicable
0 true zero or a value rounded to zero
0s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
p preliminary
r revised
x suppressed to meet the confidentiality requirements of the *Statistics Act*
E use with caution
F too unreliable to be published
* significantly different from reference category ($p < 0.05$)

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2015

All rights reserved. Use of this publication is governed by the Statistics Canada Open Licence Agreement.

An HTML version **is also available.**

Cette publication est aussi disponible en français.

Prevalence and correlates of marijuana use in Canada, 2012

Michelle Rotermann and Kellie Langlois

Abstract

Based on data from the 2012 Canadian Community Health Survey—Mental Health, past-year and lifetime marijuana use among the household population aged 15 or older in the 10 provinces was examined. In 2012, 42.5% of the population reported having ever used marijuana, and 12.2% reported use in the past year. At 33.3%, the prevalence of past-year marijuana use was higher among 18- to 24-year-olds than among other age groups (20.0% at ages 15 to 17, 15.6% at ages 25 to 44, 6.7% at ages 45 to 64, and 0.8% at age 65 or older). Past-year use was higher in British Columbia and Nova Scotia and lower in Saskatchewan, compared with the rest of Canada. While the overall percentage of people reporting past-year use in 2012 was unchanged from 2002, the percentage of males who had ever used marijuana rose from 47.0% to 49.4%; among females, the prevalence of lifetime use remained stable at 36%.

Keywords: Cannabis, illicit drugs, risk behaviour, substance use

According to the 2012 Canadian Community Health Survey—Mental Health (CCHS—MH), 12.2% of Canadians aged 15 or older (3.4 million) used marijuana in the past year. In Canada, as in many other countries, marijuana is the most commonly used illicit drug.[1-4] A dose-response relationship has been observed between the frequency of marijuana use during adolescence and reduced cognitive functioning, educational attainment, longer-term personal disadvantage, and marijuana dependence.[3,5-7] Daily users are at the highest risk of experiencing negative outcomes.[7] There is a growing consensus that marijuana use can harm developing adolescent brains.[8-10] The association between marijuana use and mental illness is less clear.[7-9] Estimation of the potential risks and the decision to use marijuana is further complicated because some countries, including Canada, allow marijuana to be authorized for medical purposes.[11] Other research has suggested that an individual's perception of risk may be reduced in places with medical marijuana laws.[12]

This analysis investigates the prevalence of, and factors associated with, past-year and lifetime marijuana use by the household population aged 15 or older in 2012. Estimates for 2012 are compared with those for 2002 (see *The data*).

Past-year users more likely to be young and male

A third (33.3%) of 18- to 24-year-olds reported using marijuana in the past year. This exceeded the prevalence of use reported by people in other age groups: 20.0% at ages 15 to 17, 15.6% at ages 25 to 44, 6.7% at ages 45 to 64, and 0.8% at age 65 or older (Table 1). In all age groups except 15 to 17, males were more likely than females to report past-year use.

In 2012, 16% of Nova Scotians and 14.5% of British Columbians reported using marijuana in the past year, significantly above the estimates for the rest of Canada (other provinces combined). At 10%, Saskatchewan residents had lower-than-average use. Past-year use was also higher than the corresponding estimates for the rest of Canada for males in Nova Scotia and for females in British Columbia.

People living in rural areas were less likely than residents of population centres to report past-year use of marijuana.

The prevalence of past-year use did not differ by household income among males; among females, the prevalence of past-year use was lower for those in the highest income households.

Frequency of use among past-year users

The frequency of marijuana use has been shown to be related to the risk of addiction[6,7] and to reduced academic achievement among youth.[5-7] Daily use in the previous year was reported by 1.8% of the population aged 15 or older, and another 3.2% reported at least weekly use (one or more times a week) (Table 2). Daily use was twice as common among males as females (2.4% versus 1.2%), and more common at ages 18 to 24 (4.9%) than among younger and older people. As well, 41% of past-year users reported that there had been a time in their lives when their marijuana use was greater than that in the last year (data not shown).

Authors: Michelle Rotermann (michelle.rotermann@statcan.gc.ca) and Kellie Langlois (kellie.langlois@statcan.gc.ca) are with the Health Analysis Division at Statistics Canada, Ottawa, Ontario.

Table 1
Prevalence of past-year marijuana use, by sex and selected characteristics, household population aged 15 or older, Canada excluding territories, 2012

	Total				Male				Female			
			95% confidence interval				95% confidence interval				95% confidence interval	
	'000	%	from	to	'000	%	from	to	'000	%	from	to
Total	**3,429.7**	**12.2**	**11.5**	**12.8**	**2,236.8**	**16.1**	**15.1**	**17.2**	**1,192.9**	**8.3***	**7.6**	**9.1**
Age group												
15 to 17	275.5	20.0[‡]	17.0	23.4	146.4	20.5[‡]	15.9	26.0	129.1	19.5[‡]	15.4	24.3
18 to 24[†]	1,021.8	33.3	30.6	36.0	641.3	41.1	37.0	45.3	380.5	25.2*	22.0	28.6
25 to 44	1,444.9	15.6[‡]	14.4	16.9	965.7	20.9[‡]	18.8	23.1	479.1	10.3*[‡]	9.0	11.9
45 to 64	648.6	6.7[‡]	5.9	7.6	450.2	9.4[‡]	8.1	10.9	198.4	4.1*[‡]	3.3	5.0
65 or older	38.9	0.8[‡][E]	0.6	1.1	33.3	1.5[‡][E]	1.0	2.2	5.6	0.2*[‡][E]	0.1	0.4
Province (age-standardized)[§]												
Newfoundland and Labrador	47.3	12.2	9.6	15.3	27.4	14.2	10.3	19.2	19.9	10.3	7.6	13.6
Prince Edward Island	12.4	10.8	8.0	14.5	7.1	12.4	8.7	17.4	5.3	9.3[E]	6.1	13.8
Nova Scotia	115.3	15.7[‡]	13.6	18.0	74.9	20.9[‡]	17.6	24.7	40.3	10.8*	8.5	13.7
New Brunswick	68.4	11.6	9.8	13.8	45.7	15.8	12.7	19.6	22.7	7.8*	5.9	10.2
Quebec	763.3	11.9	10.6	13.3	496.1	15.2	13.2	17.5	267.2	8.5*	7.1	10.2
Ontario	1,331.3	12.0	10.8	13.3	879.3	15.9	14.1	17.9	452.0	8.1*	6.9	9.5
Manitoba	110.2	11.1	9.2	13.4	66.1	13.3	10.3	17.1	44.1	8.9*	7.0	11.3
Saskatchewan	81.7	9.9[‡]	8.1	12.0	53.5	12.6	9.6	16.3	28.2	7.0*	5.3	9.3
Alberta	361.2	11.1	9.6	12.6	250.7	15.2	12.9	17.7	110.6	6.9*	5.4	8.7
British Columbia	538.4	14.3[‡]	12.6	16.2	336.0	17.9	15.2	20.9	202.4	10.8*[‡]	9.0	12.9
Immigration status												
Non-immigrant[†]	3,092.8	14.7	14.0	15.6	1,994.1	19.3	18.1	20.6	1,098.6	10.3*	9.4	11.2
Immigrant	323.9	4.6[‡]	3.8	5.6	230.5	6.7[‡]	5.2	8.5	93.4	2.6*[‡]	1.9	3.5
Years since immigration: 10 or less[‡]	93.1	4.6	3.4	6.4	62.5	6.4[E]	4.3	9.4	30.6	3.0*[E]	1.8	4.8
Years since immigration: more than 10	230.8	4.6	3.6	5.9	168.0	6.8	5.0	9.1	62.8	2.4*[E]	1.6	3.6
Residence												
Population centre[†]	2,955.0	12.7	12.0	13.5	1,935.9	17.1	15.9	18.4	1,019.1	8.5*	7.8	9.4
Rural	474.7	9.6[‡]	8.4	10.9	300.9	11.7[‡]	10.0	13.8	173.8	7.3*	6.0	8.9
Household income quintile												
1 (lowest 20%)[†]	743.8	13.2	11.8	14.7	426.5	17.8	15.4	20.5	317.3	9.8*	8.3	11.4
2	656.6	11.6	10.2	13.3	412.7	15.7	13.3	18.4	243.9	8.1*	6.6	9.8
3	640.8	11.3	10.0	12.6	413.7	14.7	12.6	17.0	227.1	7.9*	6.7	9.3
4	751.6	13.1	11.6	14.8	506.5	16.7	14.3	19.5	245.1	9.0*	7.5	10.8
5 (highest 20%)	636.9	11.6	10.2	13.1	477.4	15.8	13.7	18.1	159.5	6.4*[‡]	5.1	8.1

[†] reference category
* significantly different from male ($p < .05$)
[‡] reference category is rest of Canada (for example, Ontario compared with nine other provinces combined)
[§] significantly different from reference category or rest of Canada for provincial comparisons ($p < .05$)
[E] use with caution
Source: 2012 Canadian Community Health Survey—Mental Health.

Lifetime use

An estimated 43% of Canadians aged 15 or older have tried marijuana, and 33.5% used it more than once (Table 3). Marijuana use depends on factors that include access and/or availability, perception of risk, family, and peers.[1,2,4,13]

According to the 2012 CCHS–MH, 53.7% of 18- to 24-year-olds and 53.5% of 25- to 44-year-olds had ever used marijuana. This was significantly higher than the percentages in other age groups: 45.7% at ages 45 to 64, 25.0% at ages 15 to 17, and 13.1% of seniors.

Despite differences in survey design, response rates and modes of data collection,[14,15] the 2012 CCHS—MH past-year and lifetime estimates of marijuana use were generally similar to estimates from the 2012 Canadian Alcohol and Drug Use Monitoring Survey.[16]

Changes since 2002

In both 2002 and 2012, the overall prevalence of past-year marijuana use among Canadians aged 15 or older was stable at around 12% (Table 3). However, trends differed by age. Past-year use declined by nearly one-third in the 15-to-17 age group, remained unchanged at ages 18 to 24, and increased at ages 25 to 44 (from 14.0% to 15.6%) and at age 45 or older (from 3.0% to 4.7%). Most past-

Table 2
Frequency of marijuana use among past-year users, by sex and age group, household population aged 15 or older, Canada excluding territories, 2012

	Once			Less than once a month			One to three times a month			At least once a week (excludes daily)			Daily		
		95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval	
	%	from	to	%	from	to	%	from	to	%	from	to	%	from	to
Total	**0.7**	**0.5**	**0.9**	**4.4**	**4.0**	**4.8**	**2.1**	**1.9**	**2.4**	**3.2**	**2.8**	**3.5**	**1.8**	**1.5**	**2.0**
Sex															
Male	0.8[E]	0.6	1.1	5.2*	4.6	5.9	3.0*	2.6	3.5	4.6*	4.0	5.3	2.4*	2.0	2.8
Female[†]	0.6	0.4	0.8	3.6	3.2	4.0	1.3	1.0	1.6	1.7	1.4	2.1	1.2	0.9	1.5
Age group															
15 to 17	2.9[E]	1.9	4.6	6.2*[E]	4.3	8.9	4.4*	3.2	6.1	4.3*[E]	3.0	6.1	2.0*[E]	1.0	3.9
18 to 24[†]	2.5[E]	1.6	4.0	11.0	9.4	12.8	6.6	5.3	8.2	8.1	6.7	9.8	4.9	4.0	6.0
25 to 44	0.5*[E]	0.3	0.8	5.9*	5.1	6.7	2.7*	2.2	3.3	4.4*	3.6	5.3	2.2*	1.7	2.7
45 to 64	0.2*[E]	0.1	0.4	2.6*	2.1	3.3	0.9*	0.7	1.2	1.7*	1.4	2.1	1.2*	1.0	1.5
65+ or older	F	...	...	0.4*[E]	0.3	0.7	F	...	...	0.2*[E]	0.1	0.3	F	...	...

[†] reference category
* significantly different from reference category ($p < .05$)
[E] use with caution
F too unreliable to be published
... not applicable
Source: 2012 Canadian Community Health Survey—Mental Health.

Table 3
Lifetime and past-year prevalence of marijuana use, by sex and age group, household population aged 15 or older, Canada excluding territories, 2002 and 2012

	Lifetime prevalence						Past-year prevalence					
	2002			2012			2002			2012		
		95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval	
	%	from	to	%	from	to	%	from	to	%	from	to
One-time users included												
Total	**41.3**	**40.6**	**42.1**	**42.5**	**41.3**	**43.7**	**12.2**	**11.8**	**12.7**	**12.2**	**11.5**	**12.8**
Sex												
Male	47.0[‡]	45.9	48.1	49.4*[‡]	47.7	51.1	15.5[‡]	14.7	16.2	16.1[‡]	15.1	17.2
Female[†]	35.9	34.9	36.9	35.8	34.3	37.2	9.1	8.5	9.7	8.3	7.6	9.1
Age group												
15 to 17	39.1[‡]	36.1	42.2	25.0*[‡]	21.8	28.5	28.5[‡]	25.9	31.3	20.0*[‡]	17.0	23.4
18 to 24[†]	61.7	59.6	63.7	53.7*[§]	50.8	56.5	36.0	34.0	38.1	33.3	30.6	36.0
25 to 44	55.3[‡]	54.0	56.5	53.5[§]	51.2	55.7	14.0[‡]	13.1	14.8	15.6*[‡]	14.4	16.9
45 to 64	34.5[‡]	33.1	35.9	45.7*[‡§]	43.7	47.7	4.3[‡]	3.8	4.9	6.7*[‡]	5.9	7.6
65 or older	5.6[‡]	4.9	6.4	13.1*[‡§]	11.8	14.6	0.2[‡E]	0.1	0.4	0.8*[‡E]	0.6	1.1
Repeat users only												
Total	**32.0**	**31.4**	**32.7**	**33.5***	**32.5**	**34.7**	**11.3**	**10.9**	**11.8**	**11.5**	**10.9**	**12.1**
Sex												
Male	37.5[‡]	36.5	38.5	40.1*[‡]	38.5	41.8	14.5[‡]	13.8	15.3	15.3[‡]	14.3	16.3
Female[†]	26.8	25.9	27.7	27.1	25.9	28.5	8.2	7.7	8.8	7.8	7.1	8.5
Age group												
15 to 17	29.7[‡]	26.9	32.7	19.8*[‡]	16.8	23.2	24.1[‡]	21.6	26.7	17.1*[‡]	14.2	20.4
18 to 24[†]	51.0	48.9	53.1	43.8*[§]	41.2	46.6	33.1	31.2	35.2	30.8	28.3	33.3
25 to 44	44.8[‡]	43.5	46.0	43.5[§]	41.5	45.6	13.3[‡]	12.5	14.2	15.1*[‡]	13.8	16.4
45 to 64	24.4[‡]	23.2	25.6	36.1*[‡§]	34.2	38.1	4.0[‡]	3.5	4.6	6.5*[‡]	5.7	7.3
65 or older	2.1[‡]	1.7	2.6	6.8*[‡§]	5.9	7.9	F	...	...	0.7[‡E]	0.5	1.1

[†] reference group
* significantly different from 2002 ($p < .05$)
[‡] significantly different from reference category ($p < .05$)
[§] significantly different from preceding age group in 2002 ($p < .05$)
[E] use with caution
F too unreliable to be published
... not applicable
Sources: 2002 Canadian Community Health Survey—Mental Health and Well-Being; 2012 Canadian Community Health Survey—Mental Health.

year users—93% in 2002 and 94% in 2012—reported using more than once in the previous 12 months (data not shown).

Between 2002 and 2012, the percentage of males who had ever used marijuana rose from 47.0% to 49.4%; excluding one-time users, the increase was from 37.5% to 40.1%. Use among females remained around 36% for lifetime users overall and 27% for repeat users.

Over the 10 years, the percentage who ever used marijuana fell among 15- to 17-year-olds and 18- to 24-year-olds, remained stable among 25- to 44-year-olds, and increased among older age groups. Some of the increase in lifetime prevalence, especially at ages 45 to 64, may simply reflect aging of the cohort who were in the 25-to-44 age group in 2002.

Majority who used other drugs have used marijuana

The vast majority of Canadians who have used other illicit drugs (such as cocaine, hallucinogens and heroin) have also used marijuana: 97.4% in their lifetime and 85.1% in the past year (Table 4). This association also held among people who reported lifetime non-medical use of psychotherapeutic pharmaceuticals (such as sedatives, stimulants and opioid analgesics).

By contrast, the majority of marijuana users have *not* used other illicit drugs and/or psychotherapeutic pharmaceuticals (lifetime and past-year). Because the survey did not ask respondents' age at initiation for each drug, it is not known if marijuana use preceded or followed the use of the other drugs.

Summary

In 2012, 43% of Canadians reported that they had used marijuana at some time in their lives, and 12% reported using it in the past year. Marijuana use was more common among males than females. People aged 18 to 24 had the highest prevalence of past-year marijuana use, and tended to use it more frequently than did people of other ages. At more than 50%, the prevalence of lifetime marijuana use was highest among 18- to 24-year-olds and 25- to 44-year-olds. Between 2002 and 2012, the percentage of 15- to 17-year-olds reporting past-year use declined. The prevalence of past-year use remained stable among 18- to 24-year-olds and rose slightly at older ages. ■

Table 4
Lifetime and past-year prevalence of marijuana and other illicit drug use among users, household population aged 15 or older, Canada excluding territories, 2012

	Among users of other illicit drugs						Among marijuana users					
	Lifetime marijuana use			Past-year marijuana use			Lifetime illicit drug use			Past-year illicit drug use		
		95% confidence interval			95% confidence interval			95% confidence interval			95% confidence interval	
	%	from	to	%	from	to	%	from	to	%	from	to
Other illicit drugs	**97.4**	**96.7**	**98.0**	**85.1**	**80.0**	**89.0**	**35.9**	**34.4**	**37.4**	**14.5**	**12.7**	**16.5**
Cocaine	97.9	96.8	98.6	84.2	77.1	89.4	20.5	19.2	21.9	8.0	6.6	9.8
Club drugs	98.3	97.2	99.0	86.9	77.8	92.6	12.5	11.6	13.6	6.4	5.3	7.7
Hallucinogens	98.7	98.0	99.1	92.7	85.4	96.5	27.3	25.9	28.7	5.6	4.6	6.9
Heroin/Opium	97.7	94.3	99.1	73.1	46.9	89.3	2.6	2.2	3.0	0.3[E]	0.2	0.5
Inhalants/Solvents	95.7	92.2	97.7	75.1	45.2	91.6	2.3	1.9	2.8	F	...	...
Prescription medications (nonmedical use)	**71.9**	**68.9**	**74.6**	**28.7**	**25.0**	**32.7**	**16.3**	**15.3**	**17.4**	**11.8**	**10.2**	**13.5**
Sedatives/Tranquilizers	70.7	66.1	75.0	19.5	15.3	24.5	4.8	4.3	5.4	3.5	2.8	4.5
Stimulants	94.3	92.1	95.9	72.8	63.9	80.3	8.6	7.8	9.4	4.6	3.7	5.8
Opioid analgesics	64.1	60.0	68.0	26.2	21.6	31.4	8.2	7.5	9.1	5.9	4.8	7.2

[E] use with caution
F too unreliable to be published
... not applicable
Source: 2012 Canadian Community Health Survey—Mental Health.

The data

The data are from the cross-sectional 2012 Canadian Community Health Survey–Mental Health (CCHS–MH), which provides estimates of drug use, major mental disorders, and the use of mental health care services.[14] The survey was developed by Statistics Canada in collaboration with Health Canada, the Public Health Agency of Canada, provincial health ministries, an expert advisory group, and academic experts.

The target population was the household population aged 15 or older in the 10 provinces. Data were collected from January through December 2012. The CCHS—MH excluded people living on Indian reserves and in other Aboriginal settlements, full-time members of the Canadian Forces, and the institutionalized population. Together, these exclusions represented about 3% of the target population. The response rate was 68.9%, yielding a sample of 25,113, representing 28.3 million Canadians.

Data from the 2002 Canadian Community Health Survey–Mental Health and Well-being, conducted from May 2002 through January 2003, were used for comparisons.[17] The target population was comparable to that of the 2012 CCHS-MH. The response rate was 77%, yielding a sample of 36,984, representing 25.0 million Canadians.

Analyses were performed using SAS-callable SUDAAN v.11.0.1. Survey sampling weights were applied so that the analyses would be representative of the Canadian population. Variance estimation (95% confidence intervals) and significance testing were done using bootstrap replicate weights to account for the survey's complex sampling design.

Past-year and lifetime marijuana use were based on responses to the following questions: "Have you ever used or tried marijuana or hashish?" and "Have you used it in the past 12 months?" Past-year users were classified according to how frequently they used marijuana in the 12 months before they were interviewed: once, less than once a month, one to three times a month, weekly, or daily. Marijuana users (past-year and lifetime) were further subdivided into repeat users (one-time use excluded).

The prevalence of past-year and lifetime marijuana use was examined by sex, age, province, residence (rural area versus population centre), household income quintile, and use of other illicit drugs, including cocaine, club drugs (ecstasy, ketamine), hallucinogens, heroin, inhalants/solvents, and selected psychotherapeutics (sedatives/tranquilizers, stimulants, and opioid analgesics) for non-medical purposes.

Population centres are continuously built-up areas with 1,000 or more inhabitants and a population density of 400 or more per square kilometre, based on current census population counts. Rural areas have fewer inhabitants and less population density.

Household income quintiles were derived by calculating the ratio of respondents' total household income to the low-income cut-off corresponding to their household size and community. To minimize regional income differences, household income quintiles were estimated separately for each province and then pooled.

Although quality assurance measures were applied at each stage of data collection and processing[18] and interviewers had extensive training, CCHS—MH data have several limitations. The information is self-reported and has not been verified. Social desirability and fear of punishment, both of which are potential sources of bias, may be especially relevant to this analysis. Social desirability is a tendency for respondents to modify their answers in an effort to construct a favourable image of themselves.[19] Perceptions of what is "desirable" may differ depending on a respondent's age, sex and socioeconomic status; some respondents may under-report their drug use, and others may exaggerate it. Research suggests that youth are particularly fearful of reprisal when reporting illegal activities,[19] and therefore, marijuana use may be under-reported. As well, the extent of under-reporting may have differed in 2002 and in 2012. No information is available about intensity of use or the amount of active ingredients consumed. Analysis of marijuana confiscated by law enforcement suggests that the level of delta-9-tetrahydrocannabinol (THC), the active ingredient, has increased over time.[20] The CCHS-MH did not collect information about age at initiation of marijuana use. Respondents whose past-year use varied considerably over the period were instructed to reference the period when use was highest. While not incorrect, this may overstate typical use. Finally, no information is available from the CCHS—MH about the use of marijuana for medical purposes.

References

1. Substance Abuse and Mental Health Services Administration. *Results from the 2012 National Survey on Drug Use and Health*. Available at: http://www.samhsa.gov/data/sites/default/files/NSDUHnationalfindingresults2012/NSDUHnationalfindingresults2012/NSDUHresults2012.pdf
2. Lifestyles Statistics, Health and Social Care Information Centre. *Statistics on Drug Misuse*. Available at: http://www.hscic.gov.uk/catalogue/PUB15943/drug-misu-eng-2014-rep.pdf
3. European Monitoring Centre for Drugs and Drug Addiction. *The State of the Drugs Problem in Europe. Annual Report 2012*. Available at: http://www.emcdda.europa.eu/attachements.cfm/att_190854_EN_TDAC12001ENC_.pdf
4. United Nations Office on Drugs and Crime. *World Drug Report 2012*. Available at: http://www.unodc.org/documents/data-and-analysis/WDR2012/WDR_2012_web_small.pdf
5. Fergusson DM, Boden JM. Cannabis use and later life outcomes. *Addiction* 2008; 103: 969-76.
6. Hall W, Degenhardt L. Adverse health effects of non-medical cannabis use. *Lancet* 2009; 374: 1383-91.
7. Silins E, Horwood LJ, Patton GC, et al. Young adult sequelae of adolescent cannabis use: an integrative analysis. *Lancet Psychiatry* 2014; 1: 286-93.

8. Forti MD, Morrison PD, Butt A, et al. Cannabis use and psychiatric and cognitive disorders: the chicken or the egg? *Current Opinion in Psychiatry* 2007; 20: 228-34.

9 Volkow ND, Baler RD, Compton WM, et al. Adverse health effects of marijuana use. *New England Journal of Medicine* 2014; 370(23): 2219-27.

10. Lubman DI, Cheetham A, Yücel M. Cannabis and adolescent brain development. *Pharmacology & Therapeutics* 2015; 148C:1-16.

11. Health Canada. *About the Marihuana Medical Access Program*. Available at: http://www.hc-sc.gc.ca/dhp-mps/marihuana/about-apropos/index-eng.php

12. Wall MM, Poh E, Cerdá M, et al. Adolescent marijuana use from 2002 to 2008: Higher in states with medical marijuana laws, cause still unclear. *Annals of Epidemiology* 2011; 21(9): 714-6.

13. Freeman JG, King M, Pickett W, et al. *The Health of Canada's Young People: A Mental Health Focus 2011*. Available at: http://www.phac-aspc.gc.ca/hp-ps/dca-dea/publications/hbsc-mental-mentale/assets/pdf/hbsc-mental-mentale-eng.pdf.

14. Statistics Canada. *Canadian Community Health Survey-Mental Health (CCHS)*. Available at: http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5015

15. Health Canada. *Canadian Alcohol and Drug Use Monitoring Survey 2012. Microdata User Guide*. Available on request from Health Canada.

16. Health Canada. *Canadian Alcohol and Drug Use Monitoring Survey 2012 Results*. Available at: http://www.hc-sc.gc.ca/hc-ps/drugs-drogues/stat/_2012/summary-sommaire-eng.php#s2

17. Statistics Canada. *Canadian Community Health Survey-Mental Health and Well-being (CCHS)*. Available at: http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SurvId=1632&InstaId=5285&SDDS=5015

18. Statistics Canada. *CCHS-MH User Guide*. September, 2013. Unpublished.

19. Brener ND, Billy JOG, Grady WR. Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: evidence from the scientific literature. *Journal of Adolescent Health* 2003; 33: 436-57.

20. Mehmedic Z, Chandra S, Slade D, et al. Potency trends of delta-9-THC and other cannabinoids in confiscated cannabis preparations from 1993 to 2008. *Journal of Forensic Sciences* 2010; 55(5): 1209-17.